CENTRAL RESEARCH AND DEVELOPMENT DEPARTMENT
HASKELL LABORATORY FOR TOXICOLOGY
AND INDUSTRIAL MEDICINE

cc: J. B. Armitage-
PPD, M-5622
W. L. Sprout

June 25, 1987

TO: H. A. SMITH
PPD
M-5625

FROM: G. L. KENNEDY, JR.

AMMONIUM PERFLUOROOCTANOATE
(Ref.: Letter HAS-GLK, 6/12/87

An acceptable level for ammonium perfluorooctanoate (C-8) in the blood of workers would be 0.5 ppm. This value has been calculated using the average daily C-8 accumulation rate observed in new employees who were exposed to airborne concentrations of 0.008 mg/m^3 (memo, J. G. Loschiavo to R. J. Zipfel, 7/29/82). From this data, a steady-state concentration of 0.5[illegible] ppm, which represents the dynamics of exposure and elimination, was estimated (Memo, T. P. Pastoor to J. G. Loschiavo, 8/25/82). These estimates appear consistent with most of the reported human data but the data base is not too extensive. In addition, in rat inhalation experiments, no signs of toxicity were detected following exposure to 1 mg/m^3, an atmospheric concentration corresponding to a blood level in the male rat of 10 ppm. Extrapolation of the data relating the concentration of C-8 in the air to blood levels in the rat suggests that inhalation of 0.01 mg/m^3 would result in blood level of approximately 1 ppm (equation is blood level = 12 $\sqrt{\text{air concentration}}$).

An acceptable level for community drinking water would be 5 ppb. This value has been arrived at as follows:

1. The AEL (8-hr TWA) is 0.01 mg/m^3; a worker breathing 10m^3/day would take in 0.1 mg. Assume 100% absorption.

2. Daily ingestion by man of 2 L of water/day: 0.1 mg/2L (assume 100% absorption) = 50 ppb (a concentration in water).

RJ7005408

EID078779

3. However, community populations are not equivalent to worker populations. Therefore, factor in a 10X reduction - 5 ppb (concentration in water).

This doesn't take into account the time factor (worker exposed 8 hours, not-exposed 16 hours, etc. whereas drinking water intake could be anytime during 16 hours, off 8 hours, etc.). However, the long half-life of this chemical in the blood might make this consideration less important.

I hope that these suggested guidelines will be useful. Please call if you have any questions.

GLK:ms